

**Pay As You Throw  
Analysis for the Board of  
Aldermen**

**City of Manchester, NH**

**January 29, 2014**

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# Executive Summary

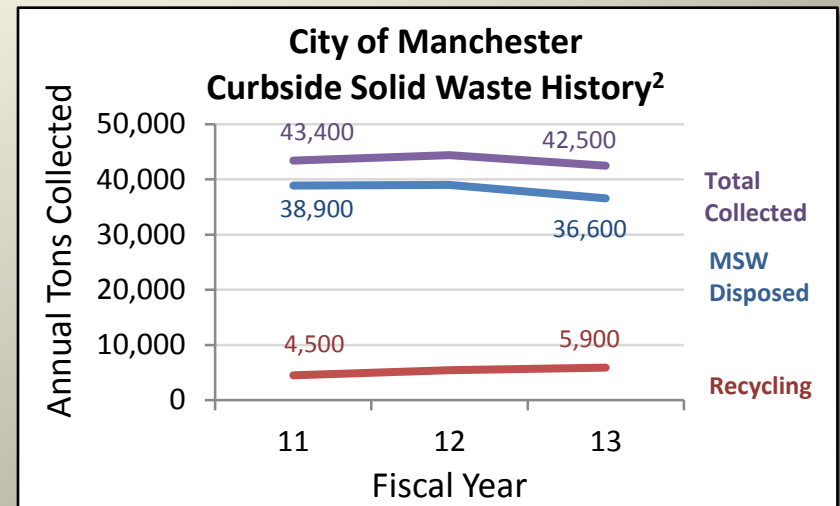
- By reducing trash disposal costs, the City of Manchester can achieve significant financial benefits
- A trash reduction program can be implemented that:
  - Increases fairness for all residents
  - Provides an alternative to raising taxes, with the added benefit of saving \$1 million for the taxpayers
  - Improves the environment, locally, regionally, and nationally
- We have used the assumptions in the table below to model the program's potential impact.

|  | MSW per Capita  |                     | Recycling per Capita |                     |
|--|-----------------|---------------------|----------------------|---------------------|
|  | Current         | with Trash Metering | Current              | with Trash Metering |
| <b>MSW Reduction Scenario</b>  | <b>869 lbs.</b> | <b>487 lbs.</b>     | <b>140 lbs.</b>      | <b>293 lbs.</b>     |
| This is the historical average reduction rate across all Trash Metering programs |                 |                     |                      |                     |

# Background/Current Situation

- Approximately 84,250 Manchester, NH residents (roughly 36,000 households) receive curbside trash and recycling collection.
- The City contracts with Pinard Waste Systems to collect recycling curbside.
- City staff collect MSW.
- In FY2013, 36,600 tons of MSW and 5,900 tons of recyclable materials were collected.
- The solid waste tipping fee paid by the City is \$70.00 per ton.
- The current recycling rate is 14%. **With Trash Metering, the City is projected to reach a 31% recycling rate.**

| Manchester<br>FY 2013 | Households<br>Served | Estimated<br>Residents <sup>1</sup> | Tons   | Lbs/<br>Capita |
|-----------------------|----------------------|-------------------------------------|--------|----------------|
| MSW                   | 36,000               | 84,250                              | 36,600 | 869            |
| Recycling             |                      |                                     | 5,900  | 140            |
| Total Received        |                      |                                     | 42,500 | 1,009          |



<sup>1</sup>Derived from 2010 US Census

<sup>2</sup>Per Manchester data

*With rising tipping fees and increased budgetary pressures, Manchester could achieve significant financial benefits from reducing the amount of trash it pays to dispose of.*

# How Solid Waste is Managed

## Resident Perspective

### Current Approach



City uses General Fund dollars to pay for trash. Residents maximize use of “free” service.



Residents may purchase any trash bags (typically \$0.30/bag)

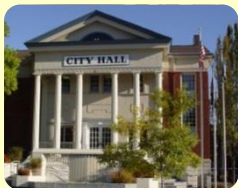


Trash bags are collected curbside



Recycling is optional, but not incentivized

### With Trash Metering



City can reallocate General Fund dollars for disposal/collection to other critical services



Residents purchase trash metering bags at local retail stores (typically \$1-\$2/bag)

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*Convenient*



Only approved bags are collected curbside

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*Easy*



Behavior changes: waste is reduced and recycling increases

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*Effective*

# Trash Metering

## Next-Generation Pay-As-You-Throw

*Next-generation PAYT programs, known as Trash Metering, are the simplest and most easily adopted by residents. The concept is amazingly straightforward: rather than pay a fixed fee as part of their taxes, residents purchase and use official City-approved trash bags stocked at local retailers. Since recycling is free, this naturally encourages overall waste reduction.*

- Trash Metering programs are **more robust and effective** than any other waste reduction program.
- While traditional PAYT programs reduce a city's residential trash by an average of only 20%, Trash Metering **results are consistently higher**, averaging 44% or more.

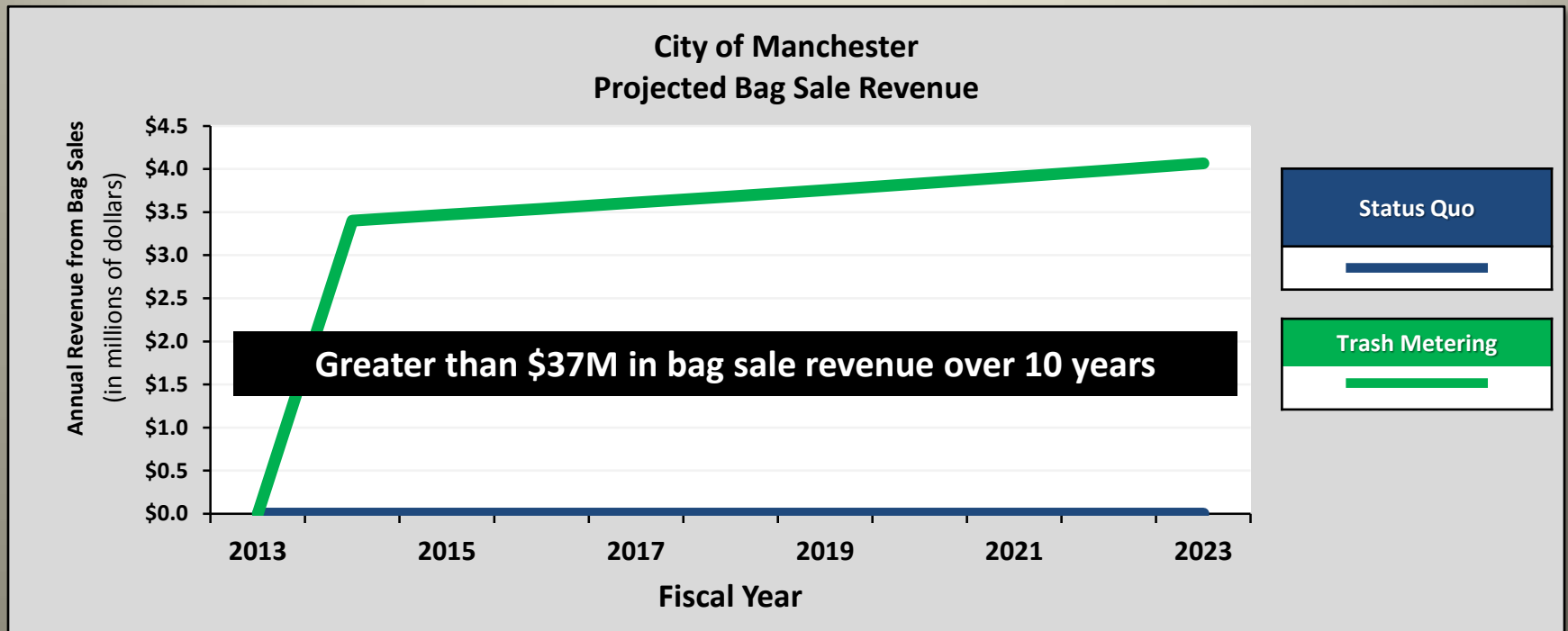


# Program Results

## Projected Bag Sale Revenue

Bag sale revenue projections use the following assumptions:

- \$2.00/bag for large bags (60% of bag sales)
- \$1.25/bag for small bags (40% of bag sales)

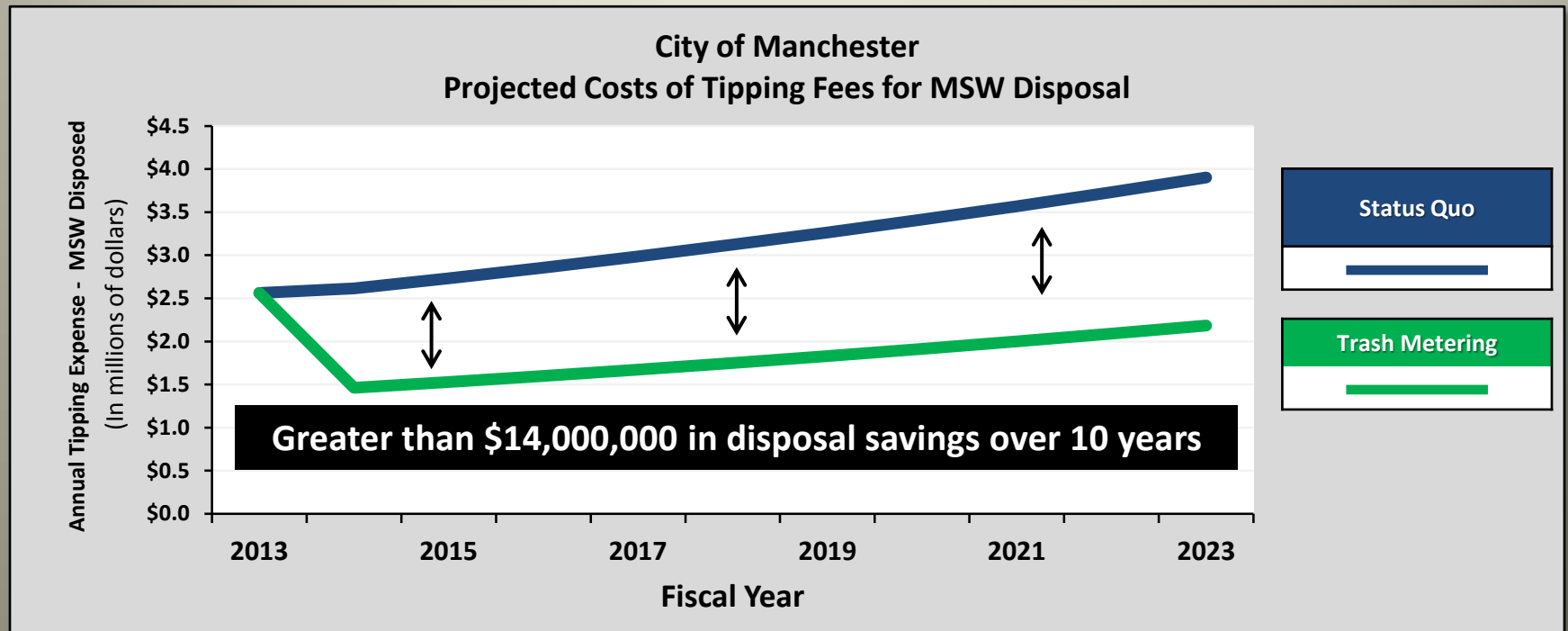


*Manchester could realize over \$37M in revenue over the next 10 years that can fund critical public services.*

# Program Results

## Projected MSW Disposal Cost Impact

Manchester's historic data and trending disposal fees indicate that the City will spend more than \$32.2 million over the next 10 years to throw away trash.

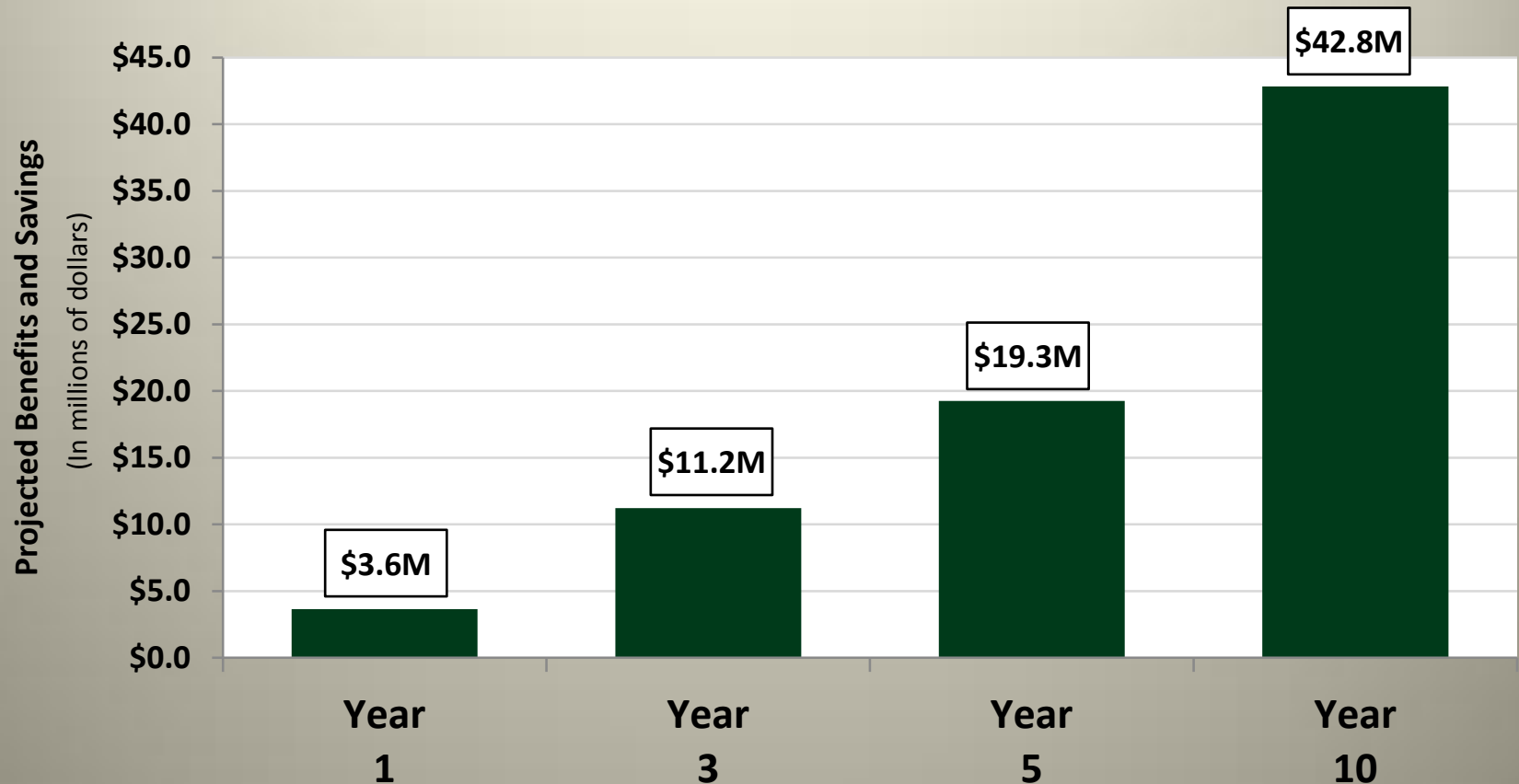


*With Trash Metering, Manchester could lower its disposal costs by 44% and save over \$14 million in the next 10 years.*



# Program Results

## Projected Program Benefits and Savings\*



\* Cumulative benefits and savings for years 3,5, and 10

*With Trash Metering, Manchester could realize  
**\$42.8 million** in net revenue and savings over the next 10 years.*

# Program Results

## Projected Program Benefits and Savings\* - Detail

|   | 1 Year             | 3 Years             | 5 Years             | 10 Years            |
|---|--------------------|---------------------|---------------------|---------------------|
| <b>Revenue</b><br>(Bag Sales)                   | \$3,402,245        | \$10,412,232        | \$17,705,422        | \$37,253,638        |
| <b>Savings</b><br>(Tipping Fee)                 | \$1,150,297        | \$3,622,043         | \$6,371,445         | \$14,618,691        |
| <b>Recycling Cost</b><br>(Disposal + New Carts) | (\$912,265)        | (\$2,812,724)       | (\$4,817,821)       | (\$9,040,558)       |
| <b>Net Program Impact</b>                       | <b>\$3,640,277</b> | <b>\$11,221,551</b> | <b>\$19,259,047</b> | <b>\$42,831,770</b> |

\* Cumulative benefits and savings for years 3,5, and 10

# With a Large Budget Deficit

Services Can Be Cut or Revenue Can Be Raised

## Revenue Can Be Raised This Way...

Residents choose  
how much they  
pay for trash. —————→ **\$3.6 million**  
*(estimated—it's your choice)*

(Unlike property taxes, residents can recycle  
more to pay less under this option)

✓ **Eliminate \$1 million in cost to  
taxpayers**

✓ **Residents choose  
how much they save**

✓ **Fair and equitable for everyone**

## Or This Way...

Increase taxes. —————→ **\$3.6 million**

**This would be an  
estimated 2% increase  
in property taxes**

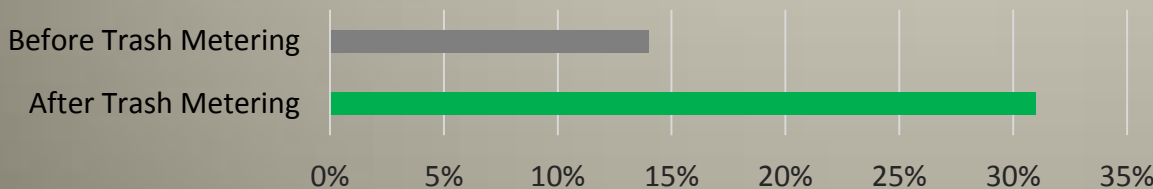
**No other  
benefits.**

# Program Results

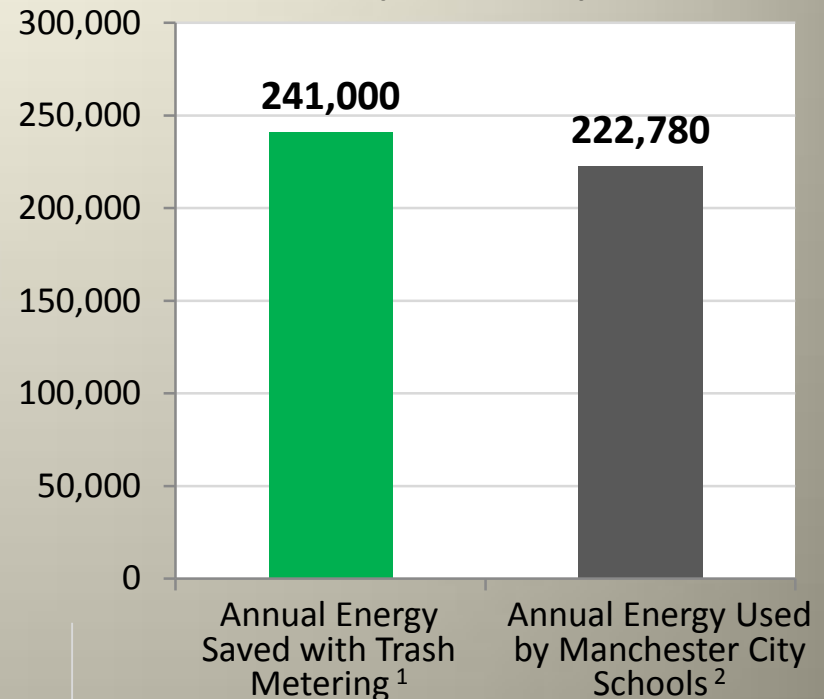
## Projected Annual Environmental Impact

- Trash Metering will have a sizable impact on the environment.
- Increased recycling means less mining and more efficient manufacturing. Less energy is used to produce new goods, transport trash, and operate landfills. Lower energy usage means less harmful air pollution.
- These impacts are real, permanent, and a byproduct of the program. They do not require separate funding and will happen automatically.

### Manchester's Recycling Rate



### Energy Comparison (in MMBTU)



<sup>1</sup>EPA. Waste Reduction Model (WARM).

<sup>2</sup>Based on data provided by Department of Public Works.

*The reduction in annual energy usage that can be achieved with Trash Metering is comparable to the entire energy usage of the Manchester City Schools.*

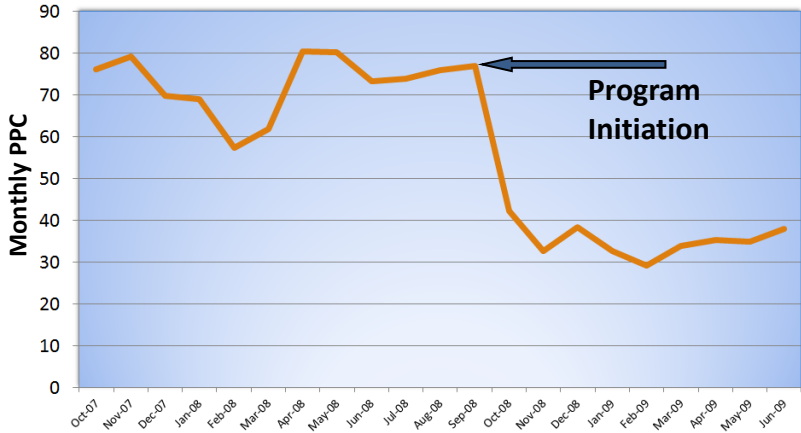
# Real-Life Success Stories

## Trash Metering Results—Immediate and Long Lasting

Impacts are immediate...

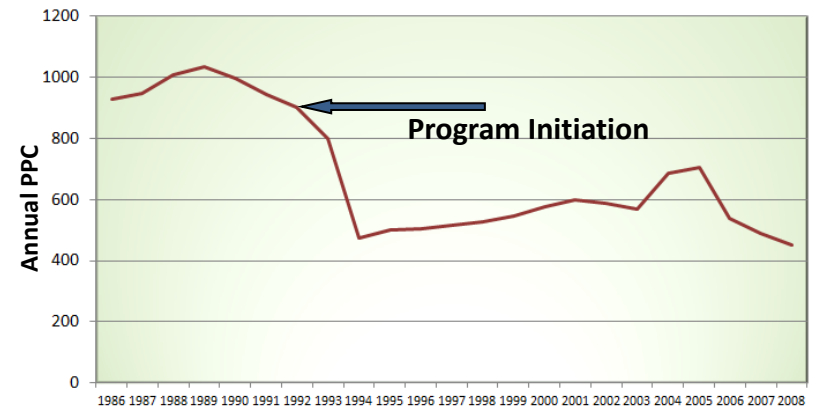
...and long lasting

**Malden Oct. 2008-June 2009**  
**Monthly** Pounds Per Capita  
Residential Solid Waste Tonnage



Source: 2007-2009 - City of Malden

**Worcester 1986-2008**  
**Annual** Pounds Per Capita  
Residential Solid Waste Tonnage



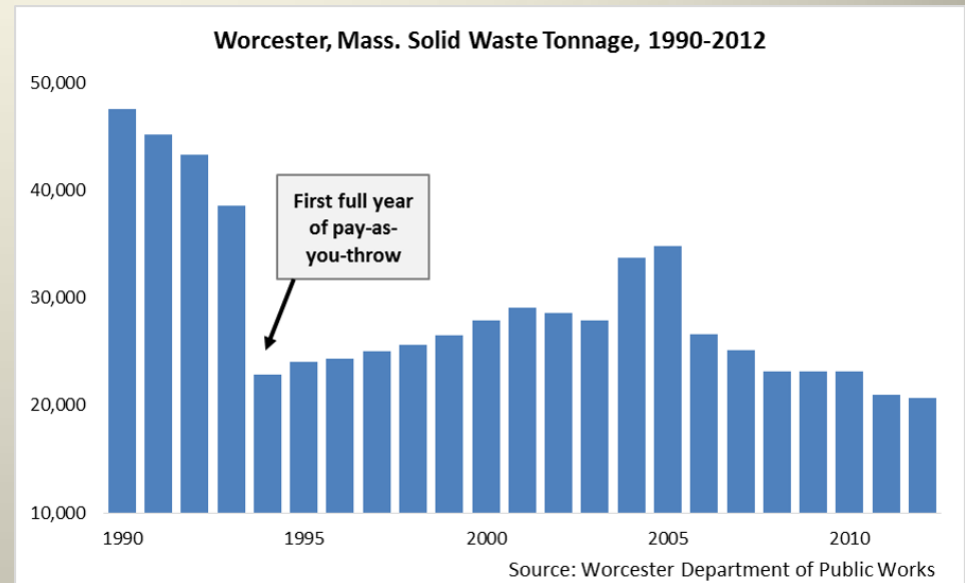
Source: 1986-2003 - City of Worcester  
2004-2008 - Mass. DEP

*The savings that Trash Metering offers a municipality begin immediately—  
and continue well beyond the foreseeable future.*

# Real-Life Success Stories

## Worcester, MA (population ~183,000)

- When the program began, Worcester was facing a budget crisis.
- They started a bag-based PAYT program in 1993.



### WORCESTER RESULTS WITH TRASH METERING

- Diverted 400,000 tons of trash
- Recycled an additional 200,000 tons
- Saved more than \$10 million in waste disposal costs
- Experienced a per-capita disposal of 396 pounds of waste per year—44% of the national average
- Achieved a 43% recycling rate, among the best in Massachusetts and far higher than the statewide average of 30%

